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Primetals Technologies receives final acceptance for secondary dedusting system at Třinecké Železárny

- **Purifies 2.4 million cubic meters of off-gas per hour**
- **Reduces off-gas dust content to less than one milligram per standard cubic meter**
- **Traps and collects dust from the desulfurization stations separately**
- **Modern system control and blower drive technology optimize energy consumption**
- **Faster hot metal charging increases production capacity**

Třinecký inženýring, a.s. has given Primetals Technologies the final acceptance certificate for the modernized secondary dedusting system installed in the Třinecké Železárny a.s. converter steel works. Třinecký inženýring, a.s. was selected by Třinecké Železárny a.s., as a turn key supplier. The project was financed from Czech and EU funds. The system removes the dust from two converter lines and secondary plant equipment. It is designed to purify 2.4 million cubic meters of gas per hour. The dust content of the purified off-gas has been reduced to less than one milligram per standard cubic meter. For the first time, the dust from the desulfurization stations is trapped and collected separately. The use of modern system control and blower drive technology optimizes energy consumption. The hot metal charging has also been speeded up to increase the production capacity. Primetals Technologies received the order from Třinecký inženýring in December 2012. The first upgraded converter came into operation in October 2014, and the entire plant has been fully operational since the start of October 2015.

Třinecké Železárny is one of the longest-standing industrial companies producing iron and steel in the Czech Republic. Its range of products includes rails, wire rod, bars, semifinished products, seamless tubes, and drawn steel. In 2014, the company produced some 2.5 million metric tons of steel, which made it the largest steel producer in the Czech Republic. The liquid steel is produced in two LD (BOF)

converters, each with a tapping weight of 180 metric tons. As the steel works is located near the inner city, Třinecké Železárny places high priority on not only keeping below the dust content emission limits, but also on noise protection. The sound pressure level of the new plant has accordingly been reduced to less than 80 dB(A).

Primetals Technologies was responsible for basic and detail engineering of the process equipment, for supply of main components, and they rendered advisory services during equipment installation. Třinecký inženýring, a.s. was responsible for civil engineering and local manufacturing of process equipment based on the detail engineering of Primetals Technologies. Moreover it was responsible also for all civil works, adaptation of the BOF building and all erection works of the process equipment. The off-gases from the two converters are purified during charging and tapping. The off-gases from the discharge pits, the desulfurization stations, the secondary metallurgy station, the lance treatment and the wire feeding stations are also purified. A roof-mounted extractor was also installed.

Two blowers, mounted on special sprung foundations and each with a power of 3.6 megawatts, extract the requisite volume of 2.4 million cubic meters of gas per hour. Static coolers reduce the temperature of the off-gases during charging to less than 180 °C. In comparison to the old dedusting system, installing static coolers in the charging line has speeded up recharging with hot metal, and so increased the production capacity. The dusts are deposited in 20 filter chambers. For the first time in a system of this type, four of these chambers are used to purify the off-gases from the desulfurization stations. The dusts from these gases are collected in separate containers.

Other special features of the new dedusting system include using Computational Fluid Dynamics (CFD) model calculations to optimize the charging hood, while at the same time capturing the smoke, and determining the most efficient filter size. A combination of sophisticated plant control and modern drive technology for the blowers ensure low energy consumption for the overall plant. Patented filter cleaning modules with diaphragm valve technology minimize compressed air consumption. The new system also sets standards on the structural side. As space is limited, it has been installed on a nine-meter-high platform above a road and several rail tracks.



New secondary dedusting system from Primetals Technologies for two converter lines and secondary plant equipment in the converter steel works of Třinecké Železárny, a.s. in Třinec, Czech Republic

This press release and a press photo are available at

www.primetals.com/press/

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Primetals Technologies, Limited headquartered in London, United Kingdom is a worldwide leading engineering, plant-building and lifecycle services partner for the metals industry. The company offers a complete technology, product and service portfolio that includes integrated electrics, automation and environmental solutions. This covers every step of the iron and steel production chain, extending from the raw materials to the finished product – in addition to the latest rolling solutions for the nonferrous metals sector. Primetals Technologies is a joint venture of Mitsubishi Heavy Industries (MHI) and Siemens. Mitsubishi-Hitachi Metals Machinery (MHMM) - an MHI consolidated group company with equity participation by Hitachi, Ltd. and the IHI Corporation - holds a 51% stake and Siemens a 49% stake in the joint venture. The company employs around 9,000 employees worldwide. Further information is available on the Internet at www.primetals.com.

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